

Attachment T
Virginia State Water Control Board
Minutes

REGULATORY AGENCY CORRESPONDENCE

Important communications regarding additions to the Roanoke Sewage Treatment Plant from the Virginia State Water Control Board are reproduced for inclusion in this manual.

Date of Letters

Sep. 11, 1970

June 17, 1971

July 13, 1971

July 26, 1971

Oct. 6, 1971

Feb. 11, 1972

Mar. 6, 1972

Mar. 17, 1972

Jan. 30, 1973



COMMONWEALTH
OF VIRGINIA

STATE WATER CONTROL BOARD

EXECUTIVE SECRETARY
A. H. PAESSLER

P. O. BOX 11143 - RICHMOND, VIRGINIA 23230 - (703) 770-2241

BOARD MEMBERS

W. P. GRIFFIN
HENRY S. HOLLAND, III
W. H. SINGLETON
ROBERT W. SPESSARD
E. BLACKBURN MOORE
CHAIRMAN

September 11, 1970

Mr. Julian Hirst
City Manager
City of Roanoke
Municipal Building
Roanoke, Virginia 24011

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Dear Mr. Hirst:

The Water Control Board at its April 7-8, 1970, meeting adopted revised quality standards for all waters in the Commonwealth of Virginia. As part of the implementation program for achieving these water quality objectives, the Board will require that all waste discharge owners submit a detailed schedule for the completion of the necessary waste treatment systems to comply with the stream standards. The deadline for completion of adequate facilities is July 1, 1972.

The Board directed that a compliance program and schedule be submitted by each owner and should contain intermediate dates for completion of a preliminary report, completion of system design, advertisement for bids, and beginning of construction. Your compliance program and schedule is due October 15, 1970.

The revised quality standards classified Niagara Reservoir for recreation and propagation of fish and aquatic life. To protect these new uses, very high treatment must be provided by the sewage treatment plants operated by the Town of Vinton and City of Roanoke. Further, critical water quality conditions exist in the upper Roanoke River arm of Smith Mountain Lake and all means available, with present technology, must be utilized to protect this major recreational facility. Studies by our staff show that the major adverse influence in this portion of the lake is the over abundance of aquatic plant growth, principally algae. Nutrients, principally carbon dioxide, nitrogen and phosphorus are essential for the growth of these plants. Whereas, carbon dioxide and nitrogen are present in abundant amounts in the lake, limited phosphorus is available and consequently, the growth and proliferation of algae is proportional to the available phosphorus. Further, our studies show that the major source of phosphorus for the upper Roanoke River arm of the lake is the sewage treatment plant discharges in Roanoke and Vinton.

To protect these quality requirements, we believe the City's new treatment facilities must remove the maximum amount of phosphorus possible with present technology and accomplish a high degree of BOD and suspended solids removal. The BOD and suspended solids in the effluent should not exceed 5 to 10 mg/l. The foregoing is largely a confirmation of your recent discussion with Messrs. Robbins and Owens of our staff.

CLEAN
STREAMS
PROVIDE
HEALTH
WEALTH
AND
RECREATION

Mr. Julian Hirst, City Manager
September 11, 1970
Page -2-

All inquiries concerning this matter should be directed to
Mr. Millard H. Robbins, Jr., Director of the Pollution Abatement
Division of this Agency.

Very truly yours,



Executive Secretary

MHRJr:scc

cc: State Department of Health - Div. of Engineering (2)
Southwestern Regional Office - SWCB

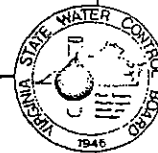


Commonwealth of Virginia

STATE WATER CONTROL BOARD

P. O. Box 11143, 4010 W. Broad St., Richmond, Virginia 23230 - (703) 770-2241

A. H. Paessler, Executive Secretary



June 17, 1971

The Honorable Roy L. Webber, Mayor
City of Roanoke
Roanoke, Virginia 24010

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

BOARD MEMBERS

Norman M. Cole, Jr.
Chairman
Ray Edwards
Henry S. Holland III
Mrs. Beverly Holmberg
Andrew M. McThenia, Jr.
W. H. Singleton
Robert W. Spessard

Dear Mayor Webber:

As a consequence of the hearing held at 2:00 p.m., June 15, 1971, at the State Water Control Board's meeting room in Richmond, Virginia, the Board voted to invoke Requirement Number 1, of the State Water Control Law against the City of Roanoke. In addition certain other requirements were made of the City, as specified in the attached Minute 55 of the above-mentioned hearing.

The Board wishes to assure you that appropriate staff members will be available at any time to meet with you and representatives to assist in the speedy resolution of this problem.

We also want to reiterate the Board's position that you will be informed of any meetings, to be held with other concerned parties, relative to this matter.

We enclose two copies of the Board's Minute 55, one for your files and one which we ask that you sign and return to this office.

Please direct all correspondence to A. W. Hadder, Director, Enforcement Division, State Water Control Board, P.O. Box 11143, Richmond, Virginia 23230.

Very truly yours,

R. V. Davis for A. H. Paessler
Executive Secretary

REB/jgm/clm

Enclosure

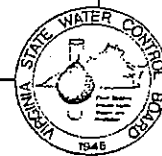
cc: Julian F. Hirst, City Manager
Members of City Council
Gerald L. Baliles, Assistant Attorney General
Norman Phillips
Pollution Abatement Division (3)

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Andrew M. McThenia, Jr.

W. H. Singleton

Robert W. Spessard

Set forth below is a minute of the State Water Control Board's meeting of June 14 and 15, 1971.

MINUTE 55 - CITY OF ROANOKE--A HEARING FOR THE PURPOSE
OF HAVING THE CITY OF ROANOKE SHOW CAUSE
WHY THE BOARD'S REQUIREMENT NUMBER 1 SHOULD
NOT BE INVOKED AGAINST THE CITY

Appearing were:

Julian F. Hirst, City Manager, City of Roanoke
D. E. Eckmann, Alvord, Burdick and Howson,
Consulting Engineers for the City
Lee B. Eddy, Chairman, Roanoke County Board of
Supervisors
Jack M. Goodykoontz, Roanoke Valley Chamber of
Commerce
M. Caldwell Butler, Attorney, Roanoke Valley
Home Builders' Association
Marshall L. Flora, Executive Director, Franklin County
Chamber of Commerce
W. H. Walton, Jr., President, Bedford County Chamber of
Commerce
Col. J. Leo Bourassa, Smith Mountain Lake Business Men's
Corporation
Melvin S. Johnston, Smith Mountain Lake Business Men's
Corporation

A transcript of the hearing will be prepared and placed on file promptly at the State Water Control Board office and will be public record.

The Board's staff reported that:

- A. The City of Roanoke has not submitted an acceptable interim program and schedule for the construction of treatment facilities which will enable it to comply promptly with the State Water Control Law.
- B. Operational data from the Roanoke sewage treatment plant shows that the plant is hydraulically overloaded, and that its efficiency is decreasing.
- C. Substantial quantities of untreated sewage are bypassing the treatment plant and entering State waters.

Based upon the evidence presented to and considered by the Board, the staff recommended, and the Board approved, the following actions to be taken by the Board:

1. Disapprove the Roanoke interim pollution abatement program as insufficient and inadequate for purposes of complying promptly with the State Water Control Law.
2. Require the City to file with the Board's staff on or before July 15, 1971 a revised detailed interim plan for correcting existing difficulties and sustaining such corrective action pending completion of the City's long range plan.
3. Invoke Requirement Number 1 and direct the City to take such immediate and necessary action to prohibit any further connections to sewers conveying wastes to the City's sewage treatment plant except where actual project construction was commenced before June 15, 1971, and to terminate the issuance of any or all permits -- or any other provisions or arrangements -- which would allow the initiation of new construction projects, including subdivisions, that would add additional sewage loads to the Roanoke sewage treatment plant except where such construction in the opinion of the City would alleviate existing health hazards, (e.g. defective septic tank drain-field system), or facilitate the serving of such vital needs as schools and hospitals, provided that reports of such exceptions shall be forwarded to and received by the Board's staff prior to the granting of such exception.
4. A. Direct the City to file with the staff and the Attorney General's Office on or before June 28, 1971 a detailed report outlining current legal provisions under which new construction in all areas served by the City's sewage treatment plant can be initiated;

B. Further direct that such report shall include copies of contractual arrangements with other areas served by its plant and to provide in detail actions taken by the City to limit the initiation of new construction in order to prevent additional plant loadings; and

- C. Request that if the above information is not satisfactory to the staff, the Attorney General's Office be authorized to take such appropriate legal action necessary to secure additional information or compliance with the Board's Requirement Number 1.
- 5. Further, direct the City to continue its efforts to improve the plant performance and reduce plant infiltration, etc. so as to solve the problem and to assure that the plant will meet the performance requirements as set forth in its letter of June 24, 1970.
- 6. Reconvene this hearing after a reasonable period of time to consider lifting Requirement Number 1 upon an affirmative showing that the plant will perform efficiently over a period of months, including wet weather conditions.

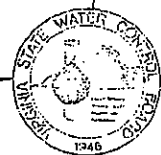
R. V. Davis

Commonwealth of Virginia

STATE WATER CONTROL BOARD

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A. H. Paessler, Executive Secretary



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Chairman
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Mrs. Wayne Jackson
Andrew M. McThenia, Jr.
W. H. Singleton
Robert W. Spessard

July 13, 1971

Mr. Julian F. Hirst
City Manager
City of Roanoke
Roanoke, Virginia

Dear Mr. Hirst:

We have prepared for your guidance the attached table and graphs designed to set forth as clearly and concisely as possible the actual performance of the Roanoke plant and projections of performance that will be necessary in order to meet the Board's expectations.

The attached table indicates the present limits for flow to the plant and the pounds per day of BOD and suspended solids which may be discharged in the effluent. The second heading in the table indicates recent plant performance as measured by the Board's staff over a 16-day survey period from May 3, 1971 to May 19, 1971. The third entry in the table indicates the performance levels which the staff will recommend that the Board require the City to achieve not later than January 1, 1972. These loads are based on the total containment and treatment of the wastes discharged to the sewerage system served by the City's plant. The last entry in the table indicates the staff's position with respect to the performance levels to be achieved and sustained by the City's long-range plans for expansion and additions to the treatment plant. The staff will take the position that these levels must be achieved not later than July 1, 1974.

The staff has purposely left blank a series of columns on the chart which should fit key accomplishment dates in both the interim and long-range plans which the City will present. The City should fill in these dates; thus providing the Board with information relative to improved and sustained plant performance between January 1, 1972 and June, 1974.

Please note that with respect to the graphs depicting BOD and suspended solids loads to the stream, there is gradual improvement during the period January 1, 1972 to June, 1974. The staff is of the opinion that if the City really wants to avail itself of the opportunity to improve the aquatic

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Mr. Julian F. Hirst

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July 13, 1971

environment downstream of the plant in Smith Mountain Lake between now and the time the expanded and modified plant is operational, it can do so. The staff is hopeful that the City's program will, in fact, parallel the line depicting a steady decrease of pollutant load discharged.

A similar situation is depicted in the case of phosphorus load from the plant. However, the staff is of the opinion that improvements here will not be so gradual as that depicted in the graphs of BOD and suspended solids, but should show dramatic decreases in pollutant load by January 1, 1972 or sooner. Once again, a dramatic decrease in pollutant load should be accomplished by June 1, 1974 or sooner.

The staff is particularly concerned about the frequent by-passing of raw sewage to State waters and we believe that several possibilities for solving this problem exist. We would suggest that the City be prepared to present detailed information on a program to solve this problem. We suggest that a minimum of the following possible interim solutions be investigated:

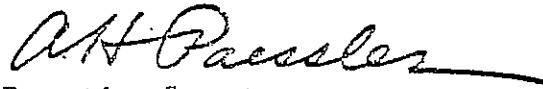
1. Retention basins
2. Screening
3. T.V. line scanning and grouting

We suggest that in the future the City take steps to tighten sewer line specifications as well as line inspection and testing procedures. Planning should be instituted to insure that, in the future, line capacity is adequate for accepting projected flows.

The City should also take immediate steps to install flow recorders at all by-pass points. A similar request has been made to Roanoke County.

If you have any questions concerning this matter, please let us know.

Very truly yours,



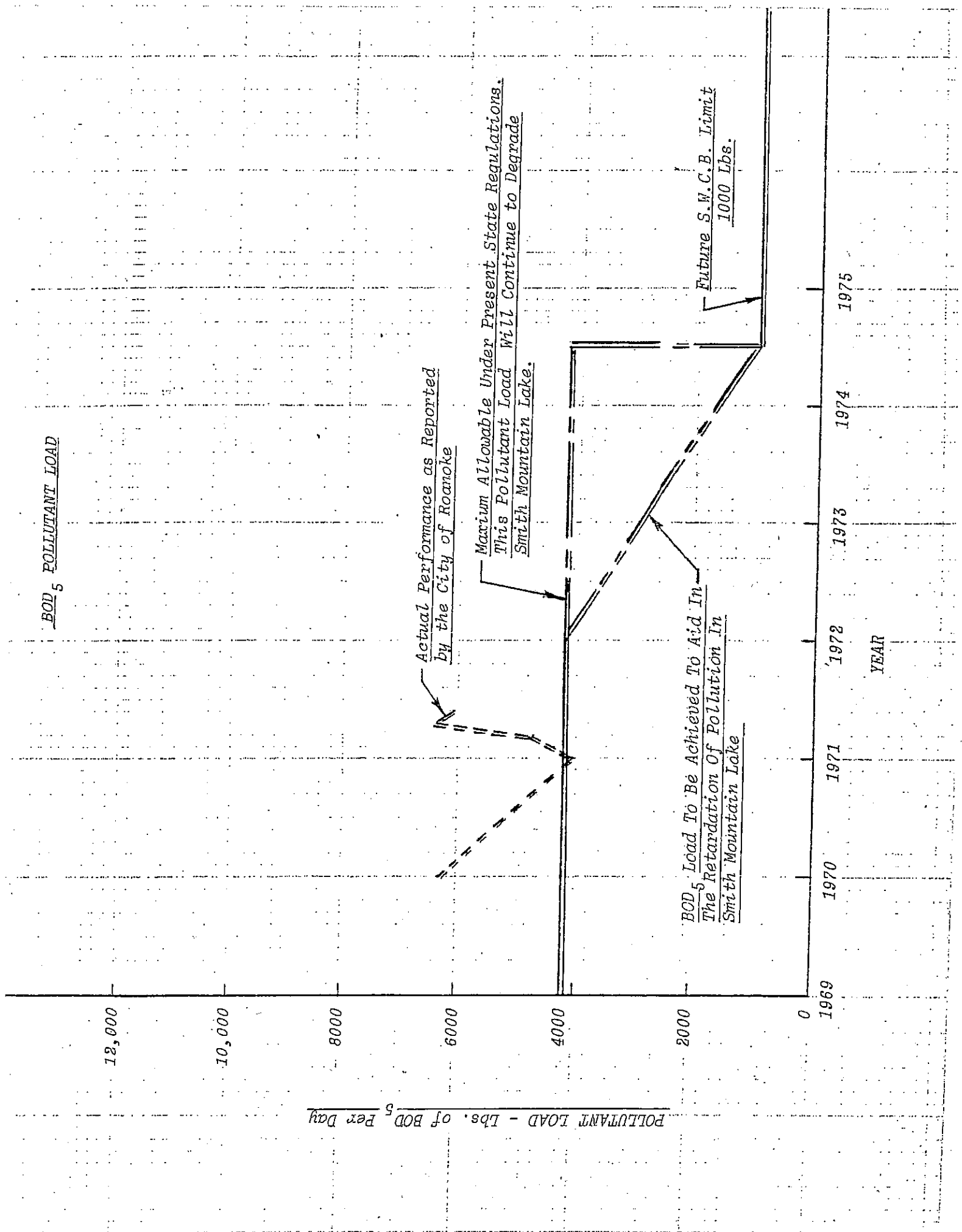
Executive Secretary

AWH/clm
Attachments

CITY OF ROANOKE
S.T.P. PERFORMANCE

POLLUTANT LOAD TO THE RIVER

	Flow - MGD	Lbs. of BOD ₅ /day	Lbs. of S.S./day	Lbs. of Phosphorus Per day	mg/L of un-oxidized Nitrogen
Present State Approved Limits	21.00	4200	4200		
S.W.C.B. Test Results	24.91	9950	40,000	1700	
1-1-72	25.00	4200	4200	300 max.	
Future S.W.C.B. Approved Limits		1000	150	40	2
6-1-74		Based on max. avg. monthly concentra- tion of 5 mg/L	Based on max. avg. monthly concentra- tion of 1 mg/L	Based on max. avg. monthly concentra- tion of 0.2 mg/L	Based on max. avg. monthly concentra- tion of 2 mg/L



PHOSPHORUS POLLUTANT LOAD

POLLUTANT LOAD - lbs. of Phosphorus Per Day

3000

2500

2000

1500

1000

500

0

1969

1970

1971

1972

1973

1974

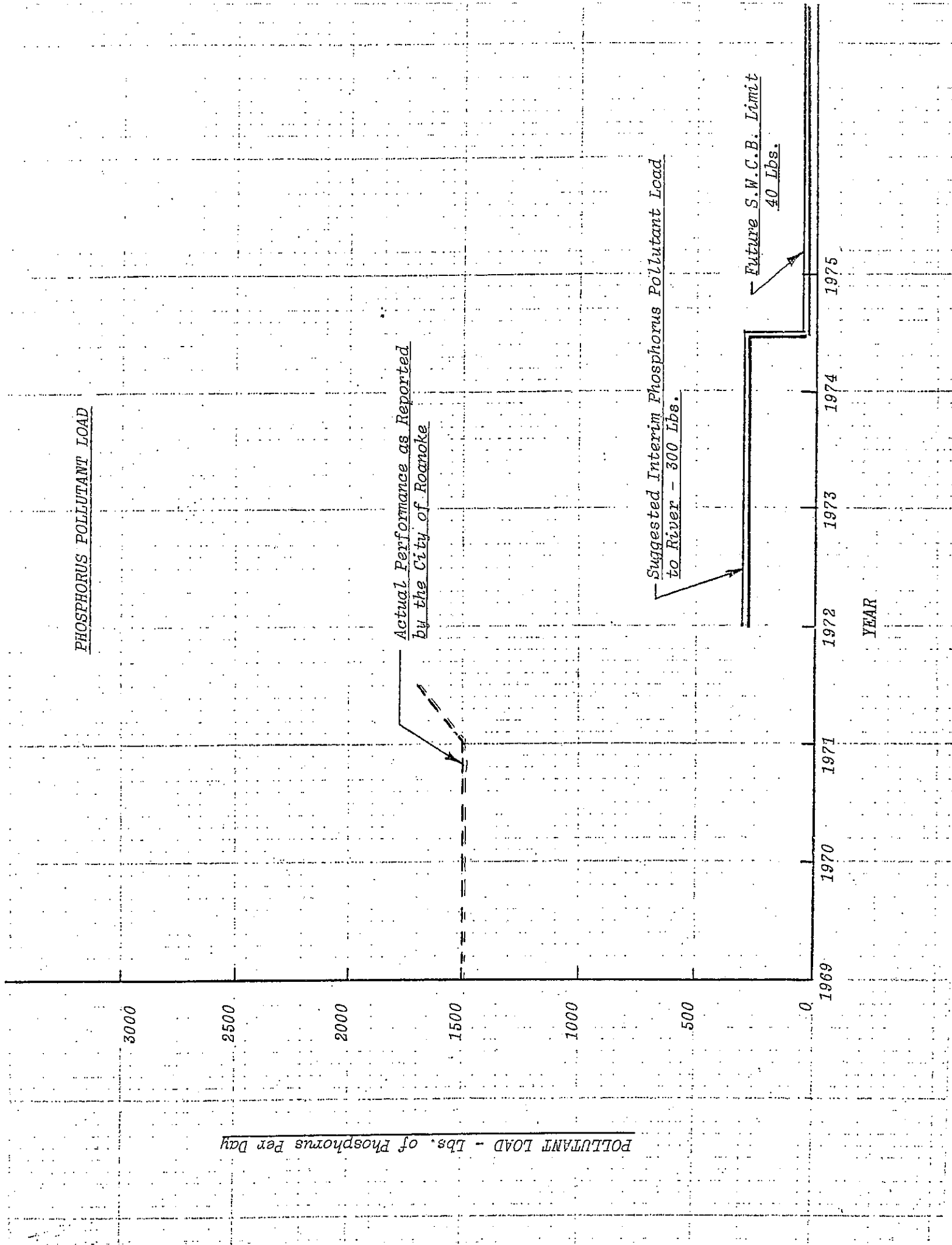
1975

YEAR

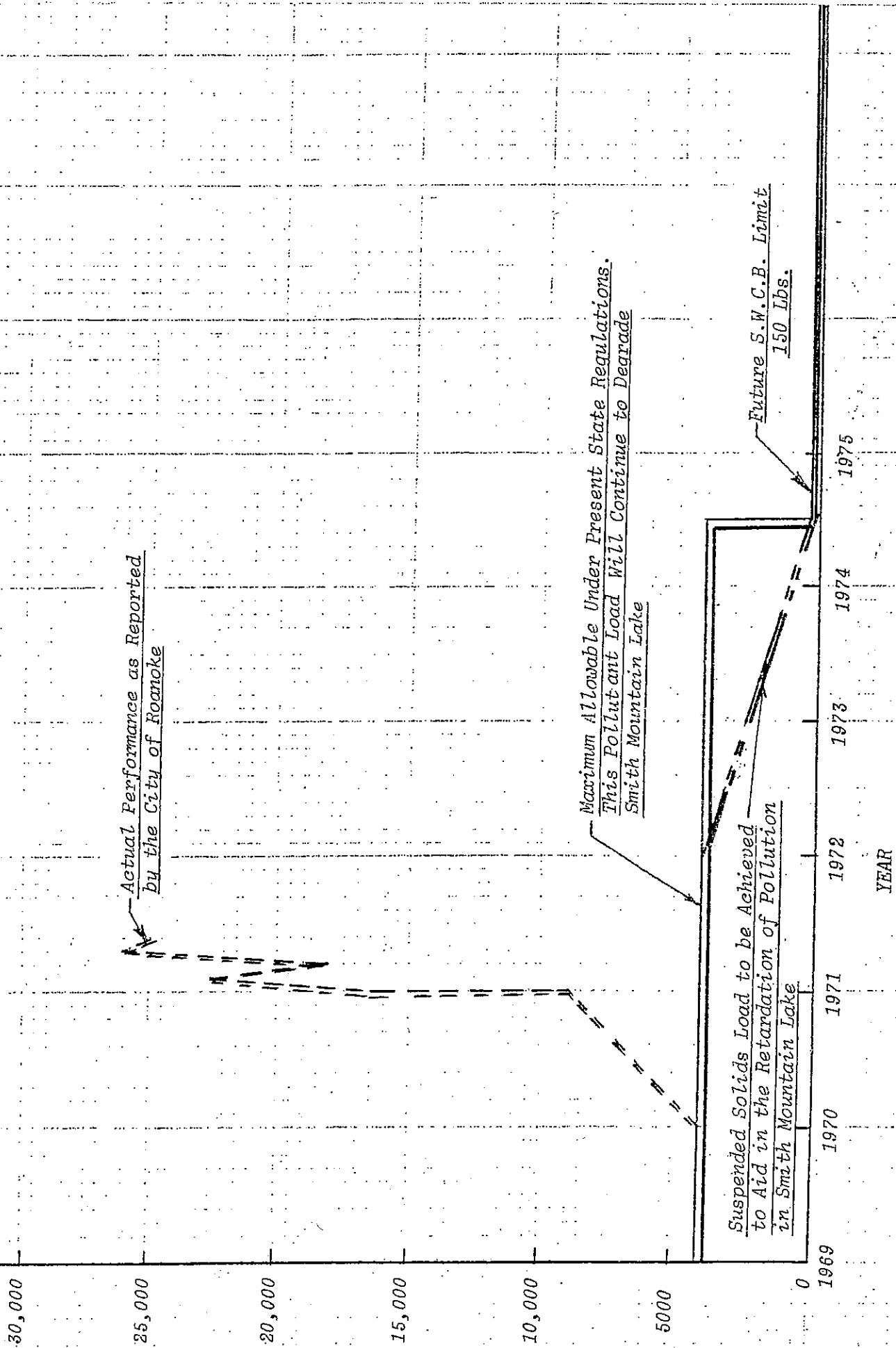
Actual Performance as Reported
by the City of Roanoke

Suggested Interim Phosphorus Pollutant Load
to River - 300 Lbs.

Future S.W.C.B. Limit
40 Lbs.



SUSPENDED SOLIDS POLLUTANT LOAD



Commonwealth of Virginia

STATE WATER CONTROL BOARD

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A. H. Paessler, Executive Secretary



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Chairman

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W. H. Singleton
Robert W. Spessard

TO ALL INTERESTED PARTIES

Enclosed please find Minute 9 from the meeting held by the State Water Control Board on July 26, 1971 at which the City of Roanoke appeared to discuss its pollution abatement program.

Very truly yours,

A handwritten signature in cursive script, reading "A. H. Paessler".

Executive Secretary

JER/clm
Enclosure

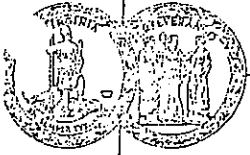
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Robert W. Spessard

Set forth below is a Minute from the proceedings of the Board at its meeting on July 26, 1971.

MINUTE 9 - CITY OF ROANOKE-AN APPEARANCE TO DISCUSS
INTERIM AND LONG-RANGE POLLUTION ABATEMENT
PROGRAMS

Appearing for the City of Roanoke were:

Julian F. Hirst, City Manager
Sam H. McGhee, III, City Engineer
Hampton W. Thomas, Councilman
Vincent S. Wheeler, Councilman
Edward A. Natt, Assistant City Attorney
William F. Clark, Public Works Director
Harold Zimmerman, Sewage Treatment Plant Superintendent

Appearing for the County of Roanoke were:

Joseph C. Thomas, Vice-Chairman, County Board of
Supervisors
William C. Overman, Consulting Engineer
William E. Conklin, Consulting Engineer

Appearing for the Smith Mountain Lake Businessmen's
Corporation was Col. J. L. Bourassa

Appearing for the State Department of Health were:

Col. Oscar H. Adams, Director, Division of Engineering
Norman E. Phillips, Jr., Director, Bureau of Sanitary
Engineering

A verbatim transcript was made which is public record
and available at the Board's Richmond Office.

Following is the decision made by the Board:

1. The Board directed that a hearing shall be convened at 2:00 p.m. on September 20, 1971, whereupon the City of Roanoke shall show cause why the Board should not issue a special order requiring that the City meet within a stated time the objectives set forth in the letter to the City from the Executive Secretary dated July 13, 1971. Such hearing shall be continued if the City submits an acceptable schedule for compliance with said objectives by September 1, 1971. A copy of such schedule shall be sent to the staff and each member of the Board.

2. The Board approved and directed that the City proceed with its interim plan subject to several technical reservations, for example, sludge handling procedures and the chemical constituents of the pickle liquor to be used in the phosphorus removal process.
3. Approval of the interim plan is conditional upon the submission of weekly reports and monthly summaries on the status of the following:
 - a. the performance of the sewage treatment plant,
 - b. the progress of the interim program,
 - c. the infiltration abatement program undertaken by all users of the sewage collection system and treatment facilities, including the Cities of Roanoke and Salem, the County of Roanoke, the Town of Vinton, and the Roanoke County Public Service Authority, and
 - d. the magnitude and duration of all instances of by-passing of untreated or improperly treated sewage from any point in the sewage collection system or treatment facilities used by the Cities of Roanoke and Salem, the County of Roanoke, the Town of Vinton, and the Roanoke County Public Service Authority.
4. The Board expressed its displeasure at the progress made by the City. However, the Board felt that the continued imposition of Requirement 1 would result in hardship to those people in the area who are unable to take any constructive action until the City of Roanoke complies with the objectives of the Board. The Board, therefore, lifted Requirement 1, but it directed that monthly reports be submitted by all users of the sewerage system, including the Cities of Roanoke and Salem, the County of Roanoke, the Town of Vinton, and the Roanoke County Public Service Authority. These monthly reports shall indicate the number of connections granted during the previous month and the reasons for granting these connections.
5. The Board directed that no grant funds for use on either the long-range or interim program are to be made available to the City of Roanoke until such time as an acceptable long-range plan, meeting the objectives previously set forth, is approved by the Board.

STATE WATER CONTROL BOARD

P. O. Box 11143, 4010 W. Broad St., Richmond, Virginia 23230 - (703) 770-2241

A. H. Paessler, Executive Secretary



October 6, 1971

The Honorable Roy L. Webber
Mayor, City of Roanoke
Roanoke, Virginia 24010

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Dear Mayor Webber:

At its meeting on September 21, 1971, the Board ordered the City of Roanoke to meet the time schedule for compliance with the objectives stated in the letter from the Executive Secretary, dated July 13, 1971, with the express understanding that all sewage treatment facilities shall be constructed and in operation within thirty-two (32) months, but in no case later than June 1, 1974.

This order was contained in Minute 11 (a copy of which is enclosed) from the September 20-21, 1971 Board meeting. Also enclosed is the original order for your files and one copy which we ask that you sign and return to this office.

The Board also directed the City to accomplish certain tasks within specified periods of time. Each of these tasks and the deadline by which each must be performed is set out below. It is emphasized that each task is an important segment of the integrated pollution abatement program for the City, and, further, it should be emphasized that the success of this pollution abatement program is dependent upon the completion of each task within the stated time.

1. The City is directed to expeditiously implement its Phase I interim plan which was previously presented to the Board. It is recognized that suspended solids concentrations will not be met as a result of construction problems which are anticipated to result from construction of the long-range facilities. However, suspended solids levels should not exceed those presently being discharged.
2. Since the equipment proposed to handle waste pickle liquor or other coagulant aids is essentially the same, the Board directs the City to proceed with design in accordance with the schedule outlined by the City, i.e., within nine (9) months. The Board further directed that the City's engineers present, not later than February 1, 1972, a comprehensive report of all aspects of the use of waste pickle liquor, including (a) an evaluation of the effect of the pickle liquor

BOARD MEMBERS

Norman M. Cole, Jr.
Chairman
Ray W. Edwards
Henry S. Holland III
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Andrew W. McThenia, Jr.
W. H. Singleton
Robert W. Spessard

- acidity, (b) whether or not the addition of a base is necessary, and (c) whether or not the addition of another coagulant or coagulant aid is necessary to achieve the desired phosphorus levels in the effluent. Attention must also be given to quality control of the pickle liquor used, and broad range analyses of typical samples of the pickle liquor shall be provided in the said report.
3. With regard to plant size, the Board directed that grant participation be limited to 31 MGD pending receipt of additional substantiating information to justify grant participation to a size of 35 MGD. The Board further directed that such information be submitted not later than November 1, 1971.
 4. With regard to the use of sludge lagoons, and based on recommendations of the State Department of Health concerning the questionable flexibility of the proposed facilities to handle increased sludge loads imposed by chemical treatment as well as the State Department of Health's fear of potential health hazards, the Board directed that unless the City's engineers can provide within 60 days additional supporting evidence to satisfy the concerns of the State Department of Health and the staff, the City shall proceed to develop other plans for sludge handling procedures.
 5. With regard to the use of dual-media filters as opposed to tri-media filters and the City's agreement to bid both, the Board directed that designs proceed along these lines with the understanding that additional investigations will be made and a report submitted to the Board not later than April 1, 1972.
 6. With regard to the method of chlorination, based on recommendations of the State Department of Health, the Board directed that the City include, in the design, facilities which in the opinion of the State Department of Health will comply with its rules of practice to insure adequate disinfection of waste discharged to State waters. This is on the presumption that if the City can provide detailed data concerning its proposed disinfection process which will satisfy the requirements of the State Department of Health, such proposal will be given due consideration.
 7. With regard to the use of the ballast ponds, the Board felt that data was lacking to substantiate the need for such facilities or to substantiate the fact that the City's proposed design will fully accomplish the proposed goals; the Board directed that this matter be handled at a staff level based on further data being submitted by the City and discussion with the State Department of Health.

The Honorable Roy L. Webber
Page 3
October 6, 1971

8. With regard to overflows in the sewer system, the Board directed that within the next 45 days, the City obtain from all users of the City sewage treatment facilities information relative to the volume and frequency of overflows from the system and the steps taken to meter such overflows. The Board further directed that the staff shall report in detail on the information obtained so that the Board may consider whether or not hearings should be convened at a subsequent Board meeting for the purpose of considering the issuing of orders to all contributors to the overflow problem.

It must again be emphasized that the completion of each of the aforementioned tasks within the stated times is crucial to the success of the pollution abatement program for the City of Roanoke.

Your cooperation is actively sought and will be heartily appreciated. The staff of the Board stands ready to assist the City in any way it can, so that the pollution abatement program may be quickly and successfully implemented.

If you have any questions, please do not hesitate to contact this office. Please direct all correspondence to A. W. Hadder, Director, Enforcement Division, State Water Control Board, P.O. Box 11143, Richmond, Virginia 23230.

Very truly yours,



R. V. Davis
Assistant Executive Secretary

FOR

A. H. Paessler
Executive Secretary

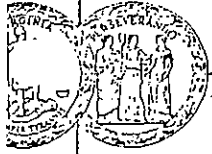
JERJr/clm
Enclosures

cc: Gerald L. Baliles, Assistant Attorney General
Norman Phillips, Jr., State Department of Health
Julian F. Hirst, City Manager, City of Roanoke
City Councilmen, City of Roanoke
The Honorable Eddie M. Joyce, Mayor, City of Salem
City Councilmen, City of Salem
The Honorable Gus W. Nicks, Mayor, Town of Vinton
Town Councilman, Town of Vinton
Other Interested Persons
Pollution Abatement Division (3)

STATE WATER CONTROL BOARD

P. O. Box 11143, 4010 W. Broad St., Richmond, Virginia 23230 - (703) 770-2241

A. H. Paessler, Executive Secretary



A SPECIAL ORDER

ISSUED TO

The City of Roanoke
Roanoke, Virginia

October 6, 1971

BOARD MEMBERS

Norman M. Cole, Jr.

Chairman

Ray W. Edwards

Henry S. Holland III

Mrs. Wayne Jackson

Andrew W. McThenia, Jr.

W. H. Singleton

Robert W. Spessard

By Minute 45 of its meeting on April 8, 1970, the State Water Control Board, herein referred to as Board, adopted revised water quality standards for all State waters. A certified letter, dated September 11, 1970, from the Executive Secretary of the Board to Mr. Julian F. Hirst, City Manager, City of Roanoke, herein referred to as City, set forth the Board's requirement of a detailed program and schedule for completion of the necessary waste treatment systems to comply with stream standards by July 1, 1972. This program and schedule for compliance with Board requirements was due by October 15, 1970.

The staff reported to the Board at its April 5-6, 1971, meeting that the City had not submitted the aforesaid schedule and compliance program, and the Board directed by Minute 38 of that meeting that a hearing be convened at 1:00 p.m., on June 15, 1971. The purpose of the hearing was for the City to show cause why the Board should not invoke Requirement 1 for those areas served by the City's sewage treatment facilities. By Minute 55 of its meeting on June 15, 1971, the Board disapproved the City's interim pollution abatement program, required the City to submit a revised detailed interim plan, and invoked Requirement 1 for those areas served by the City's sewage treatment facilities.

A letter from the Executive Secretary to Mr. Julian F. Hirst, dated July 13, 1971, set forth the actual and projected plant performance necessary to meet the Board's objectives. By Minute 8 of its July 26, 1971, meeting, the Board received and adopted the aforesaid letter of July 13, 1971, as the performance objectives to be met by the City's sewage treatment facilities.

By Minute 9 of its meeting on July 26, 1971, the Board approved the City's interim plan, subject to several technical reservations; the Board lifted Requirement 1 for all areas served by the City's sewage treatment facilities; and the Board directed that no grant funds be released to the City for construction of sewage treatment facilities until a long-range program be approved by the Board. The Board further directed that, should the City not submit an acceptable schedule for compliance by September 1, 1971, a hearing be convened at 2:00 p.m., on September 20, 1971. The purpose of the aforesaid hearing would be for the City to show cause why the Board should not issue a special order requiring the City to meet the objectives stated in

the aforementioned letter of July 13, 1971.

Due notice of the hearing was given as required by Section 62.1-44.15(8), Code of Virginia, 1950, as amended; pursuant to a telephone conversation on August 30, 1971, from Mr. R. E. Bowles of the Board's staff to Mr. Julian F. Hirst, the hearing was rescheduled for 9:30 a.m. on September 21, 1971. This telephone conversation was confirmed by letter dated August 31, 1971, from Mr. Bowles to Mr. Hirst.

The hearing was convened at 9:30 a.m. on September 21, 1971, and the following testimony was received by the Board:

The staff introduced uncontroverted evidence that the City was a major contributor to water pollution in the Roanoke arm of Smith Mountain Lake.

The staff stated that the City and the staff were in agreement on the time schedule within which the City would comply with the objectives set forth in the letter of the Executive Secretary, dated July 13, 1971. Under this schedule the City's sewage treatment facilities would be constructed and be in operation by June 1, 1974.

The staff further stated that the technical reservations, referred to in Minute 9 of the Board's meeting of July 26, 1971, expressed by the State Department of Health and the staff of the Board had not been satisfied. Evidence was introduced on each of the above technical issues by the staff of the Board, the State Department of Health, and the City.

The State Department of Health stated that it was concerned about overflows of sewage which have been occurring at the City's sewage treatment facilities and at points within the sewage collection system served by those facilities. The Department recommended that the Board order the City to implement its pollution abatement program as expeditiously as possible, so that health hazards resulting from sewage overflows could be avoided.

The staff recommended that the Board accept the City's time schedule for complying with the objectives set forth in the letter from the Executive Secretary, dated July 13, 1971, with the express understanding that all treatment facilities are to have been constructed and put in operation by June 1, 1974. The staff further recommended that the Board issue a special order requiring the City to meet the aforementioned time schedule with the provision that all treatment facilities be constructed and put in operation by June 1, 1974.

FINDINGS OF FACT

Based on the testimony adduced at the hearing, the Board found that the discharge of raw or improperly treated sewage was causing pollution of State waters within the meaning of Section 62.1-44.3(6). The Board further found that the City's time schedule for complying with the objectives of the letter from the Executive Secretary, dated July 13, 1971, was acceptable, with the express understanding that all treatment facilities can be constructed and put in operation within 32 months of the date of this order, but in no case later than June 1, 1974.

CONCLUSION OF LAW

Based on the findings of fact, the Board determined that a special order be issued to the City, pursuant to Section 62.1-44.15(8) of the Code of Virginia, 1950, as amended.

DECISION

As a result of the hearing and the findings thereof, the Board hereby orders the City to meet the time schedule for construction that was accepted by the Board, with the express understanding that all treatment facilities be constructed and put in operation within 32 months of the date of this order, but in no case later than June 1, 1974. The aforesaid schedule is as follows:

<u>Work to be Completed</u>	<u>Time for Completion</u>
1. Installation of fine bubble diffusers in 2 aeration tanks	Immediately
2. Design and construction of chemical feed equipment	9 months
3. Design and construction of sludge handling equipment	1 year
4. Design of plant addition, nitrification, flocculation, coagulation, and filtration facilities	12 months
5. Construction of facilities in #4 above	20 months

By:

R. V. Davis
R. V. Davis, Assistant Executive Secretary

FOR

A. H. Paessler, Executive Secretary

STATE WATER CONTROL BOARD

P. O. Box 11143, 4010 W. Broad St., Richmond, Virginia 23230 - (703) 770-2241

A. H. Paessler, Executive Secretary



A SPECIAL ORDER

ISSUED TO

The City of Roanoke
Roanoke, Virginia

October 6, 1971

BOARD MEMBERS

Noman M. Cole, Jr.
Chairman
Ray W. Edwards
Henry S. Holland III
Mrs. Wayne Jackson
Andrew W. McThenia, Jr.
W. H. Singleton
Robert W. Spessard

By Minute 45 of its meeting on April 8, 1970, the State Water Control Board, herein referred to as Board, adopted revised water quality standards for all State waters. A certified letter, dated September 11, 1970, from the Executive Secretary of the Board to Mr. Julian F. Hirst, City Manager, City of Roanoke, herein referred to as City, set forth the Board's requirement of a detailed program and schedule for completion of the necessary waste treatment systems to comply with stream standards by July 1, 1972. This program and schedule for compliance with Board requirements was due by October 15, 1970.

The staff reported to the Board at its April 5-6, 1971, meeting that the City had not submitted the aforesaid schedule and compliance program, and the Board directed by Minute 38 of that meeting that a hearing be convened at 1:00 p.m., on June 15, 1971. The purpose of the hearing was for the City to show cause why the Board should not invoke Requirement 1 for those areas served by the City's sewage treatment facilities. By Minute 55 of its meeting on June 15, 1971, the Board disapproved the City's interim pollution abatement program, required the City to submit a revised detailed interim plan, and invoked Requirement 1 for those areas served by the City's sewage treatment facilities.

A letter from the Executive Secretary to Mr. Julian F. Hirst, dated July 13, 1971, set forth the actual and projected plant performance necessary to meet the Board's objectives. By Minute 8 of its July 26, 1971, meeting, the Board received and adopted the aforesaid letter of July 13, 1971, as the performance objectives to be met by the City's sewage treatment facilities.

By Minute 9 of its meeting on July 26, 1971, the Board approved the City's interim plan, subject to several technical reservations; the Board lifted Requirement 1 for all areas served by the City's sewage treatment facilities; and the Board directed that no grant funds be released to the City for construction of sewage treatment facilities until a long-range program be approved by the Board. The Board further directed that, should the City not submit an acceptable schedule for compliance by September 1, 1971, a hearing be convened at 2:00 p.m., on September 20, 1971. The purpose of the aforesaid hearing would be for the City to show cause why the Board should not issue a special order requiring the City to meet the objectives stated in

Special Order - City of Roanoke
Page 2

the aforementioned letter of July 13, 1971.

Due notice of the hearing was given as required by Section 62.1-44.15(8), Code of Virginia, 1950, as amended; pursuant to a telephone conversation on August 30, 1971, from Mr. R. E. Bowles of the Board's staff to Mr. Julian F. Hirst, the hearing was rescheduled for 9:30 a.m. on September 21, 1971. This telephone conversation was confirmed by letter dated August 31, 1971, from Mr. Bowles to Mr. Hirst.

The hearing was convened at 9:30 a.m. on September 21, 1971, and the following testimony was received by the Board:

The staff introduced uncontroverted evidence that the City was a major contributor to water pollution in the Roanoke arm of Smith Mountain Lake.

The staff stated that the City and the staff were in agreement on the time schedule within which the City would comply with the objectives set forth in the letter of the Executive Secretary, dated July 13, 1971. Under this schedule the City's sewage treatment facilities would be constructed and be in operation by June 1, 1974.

The staff further stated that the technical reservations, referred to in Minute 9 of the Board's meeting of July 26, 1971, expressed by the State Department of Health and the staff of the Board had not been satisfied. Evidence was introduced on each of the above technical issues by the staff of the Board, the State Department of Health, and the City.

The State Department of Health stated that it was concerned about overflows of sewage which have been occurring at the City's sewage treatment facilities and at points within the sewage collection system served by those facilities. The Department recommended that the Board order the City to implement its pollution abatement program as expeditiously as possible, so that health hazards resulting from sewage overflows could be avoided.

The staff recommended that the Board accept the City's time schedule for complying with the objectives set forth in the letter from the Executive Secretary, dated July 13, 1971, with the express understanding that all treatment facilities are to have been constructed and put in operation by June 1, 1974. The staff further recommended that the Board issue a special order requiring the City to meet the aforementioned time schedule with the provision that all treatment facilities be constructed and put in operation by June 1, 1974.

FINDINGS OF FACT

Based on the testimony adduced at the hearing, the Board found that the discharge of raw or improperly treated sewage was causing pollution of State waters within the meaning of Section 62.1-44.3(6). The Board further found that the City's time schedule for complying with the objectives of the letter from the Executive Secretary, dated July 13, 1971, was acceptable, with the express understanding that all treatment facilities can be constructed and put in operation within 32 months of the date of this order, but in no case later than June 1, 1974.

CONCLUSION OF LAW

Based on the findings of fact, the Board determined that a special order be issued to the City, pursuant to Section 62.1-44.15(8) of the Code of Virginia, 1950, as amended.

DECISION

As a result of the hearing and the findings thereof, the Board hereby orders the City to meet the time schedule for construction that was accepted by the Board, with the express understanding that all treatment facilities be constructed and put in operation within 32 months of the date of this order, but in no case later than June 1, 1974. The aforesaid schedule is as follows:

<u>Work to be Completed</u>	<u>Time for Completion</u>
1. Installation of fine bubble diffusers in 2 aeration tanks	Immediately
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3. Design and construction of sludge handling equipment	1 year
4. Design of plant addition, nitrification, flocculation, coagulation, and filtration facilities	12 months
5. Construction of facilities in #4 above	20 months

By:

R. V. Davis
R. V. Davis, Assistant Executive Secretary

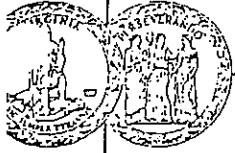
FOR

A. H. Paessler, Executive Secretary

STATE WATER CONTROL BOARD

P. O. Box 11143, 4010 W. Broad St., Richmond, Virginia 23230 - (703) 770-2241

A. H. Paessler, Executive Secretary



EXCERPT FROM THE PROCEEDINGS OF THE BOARD AT ITS MEETING ON SEPTEMBER 20-21, 1971

BOARD MEMBERS

Norman M. Cole, Jr.

Chairman

Ray W. Edwards

Henry S. Holland III

Mrs. Wayne Jackson

Andrew W. McThenia, Jr.

W. H. Singleton

Robert W. Spessard

MINUTE 11 - CITY OF ROANOKE - A HEARING FOR THE CITY TO SHOW CAUSE WHY A SPECIAL ORDER SHOULD NOT BE ISSUED REQUIRING THE CITY TO MEET, WITHIN A STATED TIME, THE OBJECTIVES SET FORTH IN THE LETTER TO THE CITY FROM THE EXECUTIVE SECRETARY, DATED JULY 13, 1971

Appearing were:

Hampton W. Thomas, Councilman, City of Roanoke
Sam H. McGhee, III, Engineer, City of Roanoke
Donald E. Eckmann, Consulting Engineer, Alvord, Burdick & Howson
Julian F. Hirst, City Manager, City of Roanoke
William L. Rossie, Jr., Roanoke Office, State Department of Health
Oscar H. Adams, Director of Engineering, State Department of Health
Norman Phillips, Jr., Director, Bureau of Sanitary Engineering, State Department of Health

A verbatim transcript of this hearing was made, which is a public record, available in the Board's Richmond Office.

By Minute 9 of its meeting on July 26, 1971, the Board directed that, should the City not submit an acceptable schedule for compliance by September 1, 1971, a hearing be convened at 2:00 p.m., on September 20, 1971. The purpose of the aforesaid hearing would be for the City to show cause why the Board should not issue a special order requiring the City to meet the objectives stated in the aforementioned letter of July 13, 1971.

Due notice of the hearing was given as required by Section 62.1-44.15(8) of the Code of Virginia, 1950, as amended; pursuant to a telephone conversation on August 30, 1971, from Mr. R. E. Bowles of the Board's staff to Mr. Julian F. Hirst, the hearing was rescheduled for 9:30 a.m., on September 21, 1971. This telephone conversation was confirmed by letter dated August 31, 1971, from Mr. Bowles to Mr. Hirst.

The staff introduced uncontroverted evidence that the City was a major contributor to water pollution in the Roanoke arm of Smith Mountain Lake.

The staff stated that the City and the staff were in agreement on the time schedule within which the City would comply with the objectives set forth in the letter of the Executive Secretary, dated July 13, 1971. Under this schedule the City's sewage treatment facilities would be constructed and be put in operation by June 1, 1974.

The staff further stated that the State Department of Health, the City, and the staff had not come to an agreement on the following technical means of achieving the aforesaid objectives:

1. the use of waste pickle liquor as a coagulant in the phosphorus removal process;
2. the type of media to be used in the filters in the phosphorus removal process;
3. the use of a ballast pond to effect a uniform rate of flow to the aforesaid filters;
4. the size of the waste treatment facilities expansion to be undertaken;
5. the use of lagoons for sludge handling;
6. the need for a chlorine contact tank downstream of the filters;
7. achieving the City's predicted suspended solids levels during sewage treatment facilities construction; and
8. overflow problems at the sewage treatment facilities and within the sewage collection system served by those facilities.

The Board received testimony on the above technical issues from the State Department of Health, the City, and the staff. Based on this testimony, the following actions were taken:

The Board issued a special order requiring the City to meet the time schedule for compliance with the objectives stated in the letter from the Executive Secretary dated July 13, 1971, with the exception that all sewage treatment facilities shall be constructed and in operation within 32 months from the date of the order, but in no case later than June 1, 1974.

The Board directed the City to expeditiously implement their Phase I interim plan previously presented to the Board. It is recognized that suspended solids concentrations will not be met as a result of construction problems which are anticipated to result from construction of the long-range facilities. However, suspended solids levels should not exceed those presently being discharged.

Since the equipment proposed to handle waste pickle liquor or other coagulant aids is essentially the same, the Board directs the City to proceed with design in accordance with the schedule outlined by the City, i.e., within nine months. The Board further directed that the City's engineers present, not later than February 1, 1972, a comprehensive report of all aspects of the use of waste pickle liquor, including an evaluation of the effect of the pickle liquor acidity, whether or not the addition of a base is necessary, and whether or not

the addition of another coagulant or coagulant aid is necessary to achieve the desired phosphorus levels in the effluent. Attention must also be given to quality control of the pickle liquor used, and broad range analyses of typical samples of the pickle liquor will be provided in said report.

With regard to plant size, the Board directed that grant participation be limited to 31 MGD pending receipt of additional substantiating information to indicate (justify) grant participation to a size of 35 MGD. The Board further directed that such information be submitted not later than November 1, 1971.

With regard to the use of sludge lagoons, and based on recommendations of the State Department of Health concerning the questionable flexibility of the proposed facilities to handle increased sludge loads imposed by chemical treatment as well as the State Department of Health's fear of potential health hazards, the Board directed that unless the City's engineers can provide within 60 days additional supporting evidence to satisfy the concerns of the State Department of Health and the staff, the City shall proceed to develop other plans for sludge handling procedures.

With regard to the use of dual-media filters as opposed to tri-media filters and the City's agreement to bid both, the Board directed that designs proceed along these lines with the understanding that additional investigations will be made and a report submitted to the Board not later than April 1, 1972.

With regard to the method of chlorination, based on recommendations of the State Department of Health, the Board directed that the City include, in the design, facilities which in the opinion of the State Department of Health will comply with its rules of practice to insure adequate disinfection of waste discharged to State waters. This is on the presumption that if the City can provide detailed data concerning its proposed disinfection process which will satisfy the requirements of the State Department of Health, such proposal will be given due consideration.

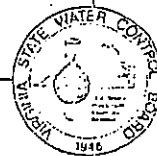
With regard to the use of the ballast ponds, the Board felt that data was lacking to substantiate the need for such facilities or to substantiate the fact that the City's proposed design will fully accomplish the proposed goals; the Board directed that this matter be handled at a staff level based on further data being submitted by the City and discussion with the State Department of Health.

With regard to overflows in the sewer system, the Board directed that within the next 45 days, the City obtain from all users of the City sewage treatment facilities information relative to the volume and frequency of overflows from the system and the steps taken to meter such overflows. The Board further directed that the staff shall report in detail on the information obtained so that the Board may consider whether or not hearings should be convened at a subsequent Board meeting for the purpose of considering the issuing of orders to all contributors to the overflow problem.

STATE WATER CONTROL BOARD

P. O. Box 11143, 4010 W. Broad St., Richmond, Virginia 23230 - (703) 770-2241

A. H. Paussier, Executive Secretary



February 11, 1972

BOARD MEMBERS

Noman M. Cole, Jr.
Chairman

Ray W. Edwards

Henry S. Holland III

Mrs. Wayne Jackson

Andrew W. McThenia, Jr.

W. H. Singleton

Robert W. Spessard

Mr. Julian F. Hirst
City Manager
City of Roanoke
Roanoke, Virginia 24010

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Dear Mr. Hirst:

You will recall that the seriousness of the overflow problem in the Roanoke area prompted the Board to direct that a hearing be convened under Section 62.1-44.15(8), Code of Virginia (1950), as amended, for the purpose of determining if special orders should be issued to the City of Roanoke, Roanoke County Public Service Authority, and the City of Salem, and in addition thereto, to the Town of Vinton, if, in the latter case, such overflows of sewage have occurred. In addition, these orders, if issued, shall require that each political subdivision cease and desist such overflows, which constitute pollution under Section 62.1-44.3(6).

You were notified by letter dated December 30, 1971, that the aforesaid hearing would be convened at 9:00 a.m., on March 13, 1972, at the Board's meeting room at 4010 West Broad Street, Richmond, Virginia.

This hearing will be convened for the additional purpose of considering the staff's recommendation that the Board direct the City of Roanoke, Roanoke County Public Service Authority, the City of Salem, and the Town of Vinton each to:

1. construct appropriate holding facilities to contain the volumes of raw sewage which overflow or are by-passed from any point within each respective jurisdiction, where it is determined that such containment, with provision for pumping the sewage back into the collection system at off-peak times, is in the public interest;
2. measure accurately the volume of sewage overflowing or being by-passed from any point within each respective jurisdiction, where it is determined that cessation or containment of such sewage at the point of overflow or by-pass is not in the public interest; and
3. prepare a detailed engineering study of the infiltration of stormwaters into sanitary sewers within its jurisdiction.

Each study shall develop, at a minimum, the following:

- a. a detailed description of the physical characteristics of the subdivision, including the number of linear feet of sanitary sewer line in the system, the size of these lines, the number of manholes in the system, etc.
- b. the number of household connections to the system, the number of commercial and industrial connections and the volume discharged from each, and the total amount of water used per day within the political subdivision's jurisdiction, etc.
- c. the number of places where infiltration is occurring, or is likely to occur; for example, places where sanitary sewers cross storm sewers, places where sanitary sewers cross creeks or streams, places where there are crossover connections from sanitary sewers to storm sewers, number of feet of combined sewers within the jurisdiction, number of places where roof drains or surface drains are tied into sanitary or combined sewers, etc.
- d. status of the infiltration abatement program's effectiveness to date, and recommendations as to how to eliminate all points of infiltration of storm waters into the sanitary sewer system. These recommendations should include an estimate of the number of manhours required to eliminate the infiltration, and the equipment required for the task.

X This hearing will also be convened for the purpose of determining if a special order should be issued requiring the City of Roanoke to provide for the necessary and lawful disposal of sludge from the sewage treatment facilities during the period before the sludge lagoons become fully operable.

This hearing will also be convened for the purpose of considering the status of the implementation of the interim and long-range pollution abatement plans undertaken by the City of Roanoke. The Board will determine if a special order should be issued to the City of Roanoke requiring that elements of these plans shall be completed within the time that has been promised for their completion. The Board will also determine if a special order should be issued requiring that other elements of the plans, for which completion dates have not been promised or heretofore set, be met within an acceptable time schedule.

Mr. Julian F. Hirst

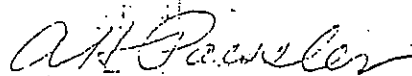
Page 3

February 11, 1972

This hearing will also be convened for the purpose of considering whether the Board should impose Requirement Number One upon the City of Roanoke, Roanoke County Public Service Authority, the City of Salem, and the Town of Vinton.

This letter constitutes due notice of the time, place and purpose of the hearing as required by Section 62.1-44.15(8), Code of Virginia (1950), as amended.

Very truly yours,



Executive Secretary

JERJr/clm

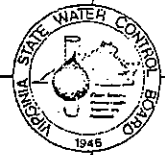
cc: The Honorable Roy L. Webber, Mayor, City of Roanoke
Gerald L. Baliles, Assistant Attorney General
Pollution Abatement Division, SWCB (3)

Outing

Commonwealth of Virginia
STATE WATER CONTROL BOARD

P. O. Box 11143, 4010 W. Broad St., Richmond, Virginia 23230 - (703) 770-2241

A. H. Paessler, Executive Secretary



6 March 1972

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

BOARD MEMBERS

Noman M. Cole, Jr.
Chairman

Ray W. Edwards

Henry S. Holland III

Mrs. Wayne Jackson

Andrew W. McThenia, Jr.

W. H. Singleton

Robert W. Spessard

Mr. Sam H. McGhee, III, City Engineer
City of Roanoke
Municipal Building
Roanoke, Virginia 24004

Subject: City of Roanoke - Federal/State Grant (WPC-Va-370)

Dear Mr. McGhee:

This is to confirm our telephone conversation on 6 March 1972 in reference to the above named subject.

On 6 March, I telephoned Mr. Fred B. Grant, Acting Chief, Municipal Grants Evaluation Section, Environmental Protection Agency (EPA), Philadelphia, in reference to the City awarding a contract(s) for the sludge holding ponds and the chemical feeder equipment. Mr. Grant advised me that he could not foresee any problem at this time so long as:

1. The City does not commence construction,
2. The State and EPA approve of the plans and specifications,
3. The Federal government makes a Part B offer and the City accepts,
4. The contractor is informed that he will have to comply with the wage determination as supplied by the Department of Labor through the Environmental Protection Agency to the City, and
5. The project was advertised in accordance with Federal regulations.

It is my understanding that the sludge holding ponds will be recommended for conditional approval; and final approval will be made only after the City has demonstrated that the facility in question is functioning properly and will be operated in a satisfactory manner. Therefore, the sludge holding ponds will be handled like any other reimbursable project. Attached is a copy of the "Rules of Procedure" for going reimbursable (see Section 6). In speaking of reimbursable projects, please be advised that there is a possibility that the new Federal legislation that is now pending in Congress might not contain a reimbursable clause. Consequently, the City might not receive funds for this particular aspect of the new treatment facilities

CLEAN
STREAMS
PROVIDE
HEALTH
WEALTH
AND
RECREATION

To: Mr. Sam H. McGhee, III, City Engineer
City of Roanoke

7 March 1972

under consideration.

As you know, the Fifth Planning District Commission prepared an interim water quality management plan covering the City's new treatment facilities. The plan was certified by the Executive Secretary and submitted to EPA. As of this date, we have not heard from the Environmental Protection Agency as to whether or not the plan is approved or disapproved. We have heard unofficially that HUD has approved the plan; EPA is reviewing it.

The interim water quality management plan calls for an institutional arrangement whereby the City of Roanoke will enter into a contract (as called for in the institution) with the City of Salem, the Town of Vinton, the County of Botetourt, and the County of Roanoke. In reviewing the grant application which was submitted, we note that only the City of Salem has entered into the called for contractual arrangements with the City of Roanoke. Does the City of Roanoke expect to sign new contracts with the other mentioned political subdivisions of the State? Further, the institutional arrangements call for connecting the appropriate industries into the regional facilities. The grant package did not contain any contractual arrangements to handle this particular aspect of the problem. What steps is the City of Roanoke planning to take in resolving this matter?

As you know, the institutional arrangements were to be consummated on or before 1 March 1972. Since this deadline was not met and new contracts have not been signed, we will have no other choice than to submit this matter to the Board for its consideration.

Not knowing what action the Board may take in this matter, and not knowing if all of the rules and regulations of EPA regarding advertising and awarding of bids have been adhered to by the City of Roanoke, please be advised that the City is awarding the contracts for the sludge holding ponds and the chemical feeders at its own risk.

It is my understanding that the staff is going to recommend that additional treatment facilities beyond that which was originally considered will be required. These items are pre-treatment facilities for return liquors and a holding basin. If the Board approves of the staff's recommendation and since these units will be part of the overall treatment system, I am of the opinion that they will be eligible for grant participation. Therefore, as requested, please submit the request for grant participation for these components at the earliest possible date.

As stated to you, I am not sure at this date how much money we have left in the contingency funds. However, this Division would certainly recommend that the components be funded if and when the funds become available, if they are not available at this date.

In further reference to the grant application, before EPA may obtain a wage determination from the Department of Labor, they will have to have the cost of the project, as well as the cost of the sludge holding ponds and chemical feeders. I called EPA on the 7th of March and gave them the cost figures you gave me by phone on 6 March, which are: (1) Chemical Feeders \$275,000, (2) Sludge Ponds \$500,000, and (3) total eligible cost of the entire project - \$14,534,000. I again requested a wage determination for your project and by letter dated 7 March 1972, I asked that if at all possible, the attainment of the wage determination be expedited.

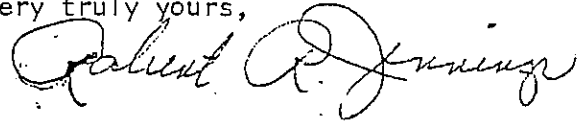
To: Mr. Sam H. McGhee, III, City Manager
City of Roanoke

7 March 1972

Mr. Simmons has written a letter to Mr. Hirst dated 6 March 1972 in further reference to what is needed to complete the review of the grant application. I am attaching a copy of this letter for your information.

If you have any questions, please let me know.

Very truly yours,



Robert R. Jennings, Director
PLANNING AND GRANTS DIVISION

RRJ:bm

Attachments

CC: Pollution Abatement Div. - Central Office
- Southwest Regional Office
Enforcement Div.

Technical Services Div.

Mr. Fred B. Grant
Environmental Protection Agency

Mr. Julian F. Hirst, City Manager
City of Roanoke

STATE WATER CONTROL BOARD

P. O. Box 11143, 4010 W. Broad St., Richmond, Virginia 23230 - (703) 770-2241

A. H. Paessler, Executive Secretary



BOARD MEMBERS

Norman M. Cole, Jr.

Chairman

Ray W. Edwards

Henry S. Holland III

Mrs. Wayne Jackson

Andrew W. McThenia, Jr.

W. H. Singleton

Robert W. Spessard

March 17, 1972

Mr. Roy L. Webber, Mayor
City of Roanoke
Municipal Building
Roanoke, Virginia 24010

CERTIFIED MAIL

RETURN RECEIPT REQUESTED

Dear Mayor Webber:

At its meeting on March 13, 1972, the Board convened a hearing to consider issuing a special order to the City of Roanoke. The staff of the Board made a presentation on the pollution problem in the Roanoke River arm of Smith Mountain Lake, on the status of the implementation of the City's interim and long-range pollution abatement programs, on the actual performance of the City's sewage treatment facilities, and on the problem of overflows of raw sewage from points within the collection systems and treatment facilities in the Roanoke metropolitan area, including those controlled by the City.

Representatives of citizen groups and individual citizens appeared and expressed concern over the pollution problem in Smith Mountain Lake.

Representatives of the City of Roanoke made a presentation on the status of the City's interim plan, on the City's long-range pollution abatement program, on the possibility of providing facilities for holding overflows of raw sewage within the City, on the possibility of providing interim sludge disposal from the City's treatment facilities, and on the status and results of the City's infiltration abatement program.

After considering all the evidence that had been presented, the Board took the following actions:

1. The Board invoked Requirement Number 1 against the City and ordered the City to take such immediate and necessary action to prohibit any further connections to sewers conveying wastes to sewage treatment facilities owned by the City of Roanoke or by the Town of Vinton, and to terminate the issuance of any or all permits or any other provisions or arrangements which would allow the initiation of new construction projects, including subdivisions, that would make additional sewage loads to the City's or Town's sewage treatment facilities except where such construction would, in the opinion of the City or of the Town, alleviate

March 17, 1972

existing health hazards, e.g., defective septic tank drain-field systems, or facilitate the serving of such vital needs as schools and hospitals, provided that reports of such exceptions shall be forwarded to and received by the Board's staff prior to the granting of any such exceptions.

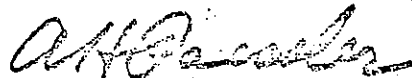
2. The Board directed that the schedule for completion of the various stages of plant expansion and addition of advanced waste treatment facilities, as set forth in the special order dated October 6, 1971, issued to the City of Roanoke, be reaffirmed. That order provides that the chemical feed equipment must be designed and constructed by May 1, 1972, and that the sludge handling equipment must be designed and constructed by August 1, 1972.
3. The Board ordered that the City of Roanoke must operate its sewage treatment facilities within the Board-approved limits of design by May 1, 1972.
4. The Board ordered the City of Roanoke to provide by December 1, 1972, a suitable retention basin or some other methods by which the bypassing of raw sewage from the treatment facilities can be eliminated. The Board further ordered the City to provide a report to the staff by April 15, 1972, which shall set forth alternative methods by which such bypassing can be eliminated.
5. The Board directed the City to find, as quickly as possible, interim sludge disposal sites, and directed the City to submit to the staff a report setting forth the details needed by the staff on each proposed site.

Enclosed are two copies of the special order issued by the Board to the City of Roanoke as a result of the Board's March 13, 1972, hearing. The original is for your files; we ask that you sign the copy and return it to this office.

Also enclosed is a copy of Minute 3 from the proceedings of the Board's meeting on March 13, 1972.

The staff of the Board stands ready to render the City whatever assistance that it can. Please address all correspondence to A. W. Hadder, Director, Enforcement Division, State Water Control Board, P. O. Box 11143, Richmond, Virginia 23230.

Very truly yours,



Executive Secretary

cc: Gerald L. Baliles, Assistant Attorney General
Norman Phillips, Jr., State Department of Health
Julian F. Hirst, City Manager, City of Roanoke
City Councilmen, City of Roanoke
Pollution Abatement Division (3)
Other interested persons

Commonwealth of Virginia
STATE WATER CONTROL BOARD

P. O. Box 11143, 4010 W. Broad St., Richmond, Virginia 23230 - (703) 770-2241

A. H. Paessler, Executive Secretary



A SPECIAL ORDER

ISSUED TO

**THE CITY OF ROANOKE
ROANOKE, VIRGINIA**

MARCH 17, 1972

BOARD MEMBERS

Noman M. Cole, Jr.
Chairman
Ray W. Edwards
Henry S. Holland III
Mrs. Wayne Jackson
Andrew W. McThenia, Jr.
W. H. Singleton
Robert W. Spessard

At the meeting of the State Water Control Board on December 7, 1971, the staff of the Board recommended, and the Board directed, that a hearing be convened at its next regular meeting for the purpose of determining if special orders should be issued to the City of Roanoke, the Roanoke County Public Service Authority, and the City of Salem, and, in addition thereto, to the Town of Vinton, if in the latter case, overflows of raw sewage have occurred there. It was stated that these orders, if issued, would require that each political subdivision cease and desist overflows of raw sewage from points within its jurisdiction. Notice was given that the hearing would be convened at 9:00 a.m., on March 13, 1972, at the Board's meeting room, 4010 W. Broad Street, Richmond, Virginia, for the Board to consider the following:

1. the need for appropriate raw sewage holding facilities;
2. the need for measuring the volume of raw sewage bypassed;
3. the need for detailed engineering studies of the collection systems;
4. the need for lawful disposal of the sludge from the City of Roanoke's sewage treatment facilities;
5. the status of the implementation of the City of Roanoke's interim and long-range pollution abatement programs; and
6. whether the Board's Requirement Number 1 should be invoked against the City of Roanoke, the Roanoke County Public Service Authority, the City of Salem, and the Town of Vinton.

Due notice of the time, place, and the purposes of the hearing was given to the City of Roanoke, the Roanoke County Public Service Authority, the City of Salem and the Town of Vinton, in accordance with Section 62.1-44.15(8), Code of Virginia (1950), as amended.

The hearing was convened on March 13, 1972, and the Board's staff made a presentation on the following:

1. the pollution problem in the Roanoke River arm of Smith Mountain Lake, a problem which results from organic and nutritional enrichment from the Roanoke metropolitan area;
2. the status of the implementation of the City of Roanoke's Board-approved Interim Plan;

3. the status of the remaining technical controversies in the design of the City of Roanoke's sewage treatment plant expansion and the addition of advanced waste treatment facilities;
4. a comparison of the actual performance of the City of Roanoke's sewage treatment plant to that performance which was promised by the City's Board-approved Interim Plan; and
5. the problem of overflows of raw sewage from points within the collection systems and treatment facilities controlled by the City of Roanoke, the Roanoke County Public Service Authority, the City of Salem, and the Town of Vinton, and the status of relief interceptor projects that are designed to eliminate these points of overflow.

The staff entered the records for all previous Board meetings, hearings, and appearances concerning the City of Roanoke since April 5, 1971, into the record of this hearing for the Board's consideration.

Representatives of citizens groups and individual citizens expressed concern over the pollution of Smith Mountain Lake and many signed petitions were entered into the record of the hearing requesting that the Board prohibit the discharge of raw sewage into the Roanoke River from the Roanoke metropolitan area...

Representatives of the City of Roanoke made a presentation on the status of the City's Interim Plan, on the remaining technical controversies in the design of the plant expansion and the addition of advanced waste treatment, on the possibility of providing capacity for holding overflows of raw sewage within the City, on the possibility of providing interim sludge disposal from the City's treatment facilities, and on the status and results of the City's infiltration abatement program.

FINDINGS OF FACT

Based on the evidence adduced at the hearing, the Board found that the City of Roanoke has discharged raw or improperly treated sewage from points within its collection systems and from its sewage treatment facilities. The Board found that the City of Roanoke sewage treatment facilities are not being operated within the Board-approved limits of design. The Board further found that the regional institutional arrangement, to which the City of Roanoke must be a party, for the transportation and treatment of sewage and industrial wastes in the Roanoke metropolitan area, had not been accomplished by the March 1, 1972, deadline; this regional institutional arrangement is an essential element of the regional pollution abatement program.

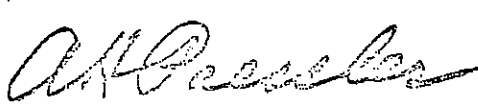
CONCLUSIONS OF LAW

Based on the findings of fact, the Board concluded that the City of Roanoke is causing pollution of State waters, within the meaning of Section 62.1-44.3(6), and that a special order should be issued to the City of Roanoke, pursuant to Section 62.1-44.15(8), Code of Virginia (1950), as amended. The Board further concluded that the City of Roanoke is not engaged in an active pollution abatement program.

DECISION

As a result of the hearing and the findings thereof, the Board hereby orders the City of Roanoke to provide by December 1, 1972, a suitable retention basin or some other methods by which the by-passing of raw sewage from the treatment facilities can be eliminated. The Board hereby orders the City of Roanoke to submit a report to the staff by April 15, 1972, which shall set forth alternative methods by which such by-passing of raw sewage can be eliminated. The Board further orders the City of Roanoke to operate its sewage treatment facilities within the Board-approved limits of design by May 1, 1972. The Board hereby invokes Requirement Number 1 against the City of Roanoke and orders the City to take such immediate and necessary action to prohibit any further connections to sewers conveying wastes to sewage treatment facilities owned by the City of Roanoke or by the Town of Vinton, and to terminate the issuance of any or all permits or any other provision or arrangements which would allow the initiation of new construction projects, including subdivisions, that would make additional loads of sewage to the City's or Town's sewage treatment facilities, except where such construction would, in the opinion of the City, alleviate existing health hazards, e.g., defective septic tank drainfield systems, or facilitate the serving of such vital needs as schools and hospitals, provided that reports of such exceptions shall be forwarded to and received by the Board's staff prior to the granting of any such exceptions.

By: _____


A. H. Paessler, Executive Secretary

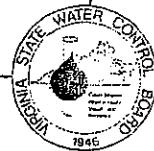
Received By: _____

Date: _____

STATE WATER CONTROL BOARD

P. O. Box 11143, 4010 W. Broad St., Richmond, Virginia 23230 - (703) 770-2241

A. H. Paessler, Executive Secretary



TO ALL THOSE PERSONS WHO
ATTENDED THE HEARING ON
MARCH 13, 1972

Set forth below is Minute 3 from the proceedings of the Board at its
meeting on March 13, 1972.

BOARD MEMBERS

Norman M. Cole, Jr.
Chairman
Ray W. Edwards
Henry S. Holland III
Mrs. Wayne Jackson
Andrew W. McThenia, Jr.
W. H. Singleton
Robert W. Spessard

MINUTE 3 - CITY OF ROANOKE, ROANOKE COUNTY PUBLIC SERVICE AUTHORITY, CITY
OF SALEM, AND TOWN OF VINTON -- A HEARING TO DETERMINE IF
SPECIAL ORDERS SHOULD BE ISSUED TO THE CITY OF ROANOKE, ROANOKE
COUNTY PUBLIC SERVICE AUTHORITY, CITY OF SALEM AND TOWN OF
VINTON

Appearing were:

Julian F. Hirst, City Manager, City of Roanoke
Hampton W. Thomas, City Councilman, City of Roanoke
William F. Clark, City of Roanoke
Edward A. Natt, City of Roanoke
Sam H. McGhee, III, City of Roanoke
James A. Beavers, Roanoke County Public Service Authority
Louis S. Waldrop, Roanoke County Public Service Authority
William J. Paxton, City of Salem
Gus W. Nicks, Mayor, Town of Vinton
Donald A. Smith, Town of Vinton
Senator R. S. Burruss, Jr.
Stephen R. Dice, Fifth Planning District Commission
Norman Howard, Division of Water Resources
Colonel J. Leo Bourassa, Smith Mountain Lake Business Men's Corporation
William L. Saunders, Smith Mountain Lake Business Men's Corporation
Emmit A. Collins, Smith Mountain Lake Business Men's Corporation
August Mudling, Smith Mountain Lake Business Men's Corporation
M. H. Aylor, Roanoke River Basin Association
R. S. Hamilton, Reservoirs Regional Planning Committee
Rosemary Nichols, Central Virginia Planning District Commission
Walter E. Mather, West Piedmont Planning District
H. M. Nance, Bedford County Chamber of Commerce
E. R. English, Altavista Chamber of Commerce
W. H. Walton, Jr., Chamber of Commerce
Stephen C. Shelton, Franklin County Board
Charles E. Green, Jr.
W. D. Shields
Lois C. Long
Armistead Long, III
J. Wayne Craig, Roanoke County Public Service Authority

Representatives of citizens groups and individual citizens expressed concern over the pollution of Smith Mountain Lake and many signed petitions were entered in the record requesting that the Board prohibit the discharge of raw sewage into the Roanoke River from the Roanoke metropolitan area.

Representatives of the City of Roanoke made a presentation on the status of the City's Interim Plan, on the remaining technical controversies in the design of the plant expansion and addition of advanced waste treatment facilities, on the possibility of providing capacity for holding overflows of raw sewage within the City, on the possibility of providing interim sludge disposal from the City's treatment facilities, and on the status and results of the City's infiltration abatement program.

Representatives of the Roanoke County Public Service Authority made a presentation on the status of the Authority's infiltration abatement program and on the status of the Authority's relief interceptor construction program, which will provide additional sewer capacity and which, in their opinion, should eliminate all points of raw sewage overflow within the Authority's collection system.

The representative of the City of Salem made a presentation on the status and results of the City's infiltration abatement program. The City's representative indicated that the by-passing at the City of Salem's metering station only occurred when the River was high, that infiltration abatement should reduce the instances of by-passing at that point, and that the City might be faced with legal action if the City were required to build a raw sewage holding facility at the sewage metering station.

The representative of the Town of Vinton made a presentation on the status of the Town's infiltration abatement program, and on the operation of the Town's treatment facilities.

Based upon the evidence presented to, and considered by the Board, and based upon the recommendations of the staff:

1. The Board invoked Requirement Number 1 against the City of Roanoke, the Roanoke County Public Service Authority, the City of Salem and the Town of Vinton and ordered them to take such immediate and necessary action to prohibit any further connections to sewers conveying wastes to sewage treatment facilities owned by the City of Roanoke and the Town of Vinton, and to terminate the issuance of any or all permits, or any other provision or arrangements, which would allow the initiation of new construction projects, including subdivisions, that would make additional sewage loads to the City's or Town's sewage treatment facilities except where such construction would, in the opinion of the City or of the Town, alleviate existing health hazards, e.g., defective septic tank drain-field systems, or facilitate the serving of such vital needs as schools and hospitals, provided that reports of such exceptions shall be forwarded to and received by the Board's staff prior to the granting of any such exceptions.

COMMONWEALTH OF VIRGINIA
STATE WATER CONTROL BOARD
P.O. BOX 11143-RICHMOND, VIRGINIA 23230

January 30, 1973

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

The Honorable Roy L. Webber, Mayor
City of Roanoke
Municipal Building
Roanoke, Virginia

Dear Mayor Webber:

Following is set forth a ruling that the Board made at its meeting on January 29-30, 1973 regarding a matter in which you are interested.

If you have any questions, please let us know.

Sincerely,

Original Signed by E. T. Jensen

Executive Secretary

Enclosures - State Department of Health Letter
State Water Control Board Memorandum

cc: Mr. Julian Hirst, City Manager
Mr. S. H. McGhee, III, City Engineer
Alvord, Burdick and Howson, Engineers
Environmental Protection Agency
State Department of Health, Richmond (2)
Southwestern Regional Office - SWCB

LKO:jr

Minute No. 4: City of Roanoke - Contract "E"; Secondary and Advanced
Waste Treatment Facilities

In accordance with a letter dated November 27, 1972 from the State Department of Health and a memorandum dated January 10, 1973 from A. H. Paessler, the Board approved final plans and specifications for the subject facilities. The approval is subject to the State Department of Health comments and conditions of approval 1-13 and the Board's conditions of approval 1-4.

MEMORANDUM

File Copy # 2884

State Water Control Board

4010 WEST BROAD STREET

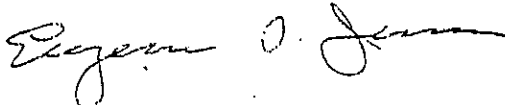
P. O. Box 11143

RICHMOND, VA. 23230

SUBJECT: City of Roanoke - Contract E, Secondary and Advanced Waste Treatment Facilities - WPC-Va-370

TO: Board Members

FROM: A. H. Paessler



DATE: January 10, 1973

COPIES:

Plans and specifications dated 1972, entitled "Contract E - Sewage Treatment Plant Additions, Roanoke, Virginia," and prepared by Alvord, Burdick and Howson, Consulting Engineers, Chicago, Illinois, have been reviewed by the staff.

Facilities covered by these plans and specifications are as follows:

1. 4 additional aeration basins
2. 4 additional secondary settling basins
3. 6 nitrification basins
4. 4 nitrification settling basins
5. 3 additional primary digesters
6. 1 additional secondary digester
7. 3 flotation sludge thickeners
8. 2 rapid mix basins
9. 4 flocculation basins
10. 4 coagulation basins
11. 8 filtration units
12. Chlorination facilities

This contract is divided into three divisions:

Division 1 - 14 MGD activated sludge addition, nitrification facilities, thickeners, and digesters (biological process units).

Division 2 - 35 MGD tertiary treatment plant (physical-chemical process units).

Division 3 - Combination bid for Divisions 1 and 2.

State Department of Health Comments:

The following associated projects were reviewed and/or approved with conditions and may be in some stage of construction to be coordinated with this project:

1. Contract "A" Division No. 1 Sludge Lagoons (reference our letter to Board March 13, 1972)
2. Contract "A" Division No. 2 Phosphorus Removal Facilities (our letter to the Board March 3, 1972)

...continued

January 10, 1973

3. Contract "B" Specifications for Furnishing Equipment for Sewage Plant Additions (our letter to the Board July 14, 1972)
4. Contract "C" Primary Treatment Facilities (our letter to the Board September 14, 1972)
5. Contract "D" 30 Million Gallon Basin (our letter to the Board November 13, 1972)

Due to the complex nature of this project with present and future coordinated work (including various above mentioned projects), any conflicts should be resolved prior to construction.

State Department of Health Action:

By letter dated November 27, 1972, the State Department of Health recommended approval of these plans and specifications subject to the following conditions:

1. The hold-ballast pond connections and flow pattern are not indicated, (Sheet 1 and Sheet 3). This should be clarified.
2. The chlorine contact tank individual section drains should be clarified to show how basin can be cleaned with one section in operation. Waste-water suction line should be shown from filter building, (Sheet 2).
3. Interplant recycle treatment should be shown and/or clarified with reference to solid return lines from thickener, supernatant, waste nitrified, etc., and the line to farm should be eliminated. This farm line was a temporary expedient connection used during interim time period.
4. The plans expansion appears to encroach on residential area closer than recommended 600 feet, (Sheet 3).
5. The specification should include clarification of distance relationships between water and waste lines. All water connections should be identified as potable or non potable, "Not safe for drinking", and clarified on plans including vacuum breakers where necessary on hydrants, etc..
6. An evaluation of present noise level in blower room should be made and if necessary, construction adjustment in these plans should be made as result of evaluation for the new units.
7. Some consideration should be given to laboratory expansion equipment, etc. commensurate with increased lab load due to tertiary treatment. Equipment capacity limitation and table top space are limited. Please clarify that this has been evaluated.
8. A spray arrangement should be provided on aeration units. The nitrification pH control provision mentioned in functional design report appeared to be overlooked or eliminated. Pickling liquor lines at entrance to basin also needs clarification. These items should be clarified.

... continued

9. These comments or conditions when supplemented by our previous dependent comments on the other projects listed including those with reference to Roanoke City "Basic Concept Plans for Secondary and Advanced Waste Treatment Facilities" constitute our conditions for approval of Roanoke City Waste Treatment facilities plans. A copy of our technical comments on the "Basic Concept Plans for Secondary and Advanced Waste Treatment" are attached for reinforcement to provide a package approach. Comment numbered 14 has been satisfactorily resolved in Contract E plans.
10. Please clarify gravel size, page 43-6 for dual media bid. The layer size is usually shown only on the bottom layers thus we request clarification or more information.
11. Submit data regarding flood conditions (50 to 100 year flood frequency) of the receiving stream at this location due to possible surcharging of advanced waste treatment units.
12. Please supply manufacturer's model number for the filter rate of flow controllers.
13. Justify control of chemical feeders utilizing filter effluent controllers.

Staff Comments:

The Board, by letter received by the City of Roanoke on 28 November 1972, directed the City to have an independent engineering consultant review done of the total plans and specifications for the Roanoke expansion and upgrade. This report was to be submitted within 60 days. In the staff's opinion, any major design discrepancies brought out by this review should be corrected by addendums to further plant design or as on-site construction changes.

It is the staff's intent to submit a summary of the independent consultant's report along with recommendations to the Board as soon as the staff has received it and has given it a proper review.

The electrical plans for this contract do not show the facility having a minimum of dual electrical power. In addition, the plans indicate that switch gear for similar and/or duplicate components will be housed adjacent to each other. It is the staff's opinion that this facility should have two power sources and that similar components should be separated as much as practical.

Review of the plans noted only one compressor for supplying instrument and operating air. It is the staff's opinion that the plant's pneumatic system should have a supply back-up capability.

Continued . . .

January 10, 1973

On January 23, 1973, the Board's staff, the State Department of Health and the City of Roanoke and its Engineers met and reviewed the noted deficiencies in Contract E's plans and specifications as well as conditions for approval on Contracts A-D. All major points were discussed and satisfactory programs were outlined to meet the outstanding conditions. Therefore, it is the staff's opinion that outstanding conditions in Contracts A-E will be met by the City.

STAFF RECOMMENDATIONS:

In accordance with the conditional approval by the State Department of Health cited above, it is recommended that this proposal be approved with the conditions that:

- (1) The plant's design and/or construction incorporate any corrective actions directed by the Board after review of the City's independent consultant review of the plant's plans and specifications;
- (2) The City obtain two sources of electrical power. If two utility (outside) sources are used then full plant capacity must be contracted for both sources with appropriate automatic switch-over capability being designed and installed.
- (3) Motor control centers and instrument circuits shall be designed so that component circuitry for similar/duplicate units is separated physically as much as practical. If two sources of utility power are used, then motor control centers shall be served by both sources, each normally operating approximately 1/2 of the motor control centers with appropriate manual switch-over gear, to enable full operation with one power source.
- (4) The plans and specifications include a duplicate air operating-instrument air supply source.

We request that you make your wishes known by the enclosed letter ballot.

CWM:jr

COMMONWEALTH OF VIRGINIA

STATE WATER CONTROL BOARD

NOV 29 1972

MACK J. SHANHOLTZ, M. D.
COMMISSIONER

POLLUTION ADVERTISEMENT DIVISION		
FROM	TO	REPLY
DW	✓	✓
DW	✓	✓
SEW	✓	✓
T. H.	✓	✓
CS	✓	✓
ER	✓	✓
ER	✓	✓
SWR	✓	✓
IP	✓	✓
SFC	✓	✓



DEPARTMENT OF HEALTH
RICHMOND, VA. 23219

FROM	TO	REPLY
✓	✓	✓
✓	✓	✓
✓	✓	✓
✓	✓	✓
✓	✓	✓
✓	✓	✓
✓	✓	✓
✓	✓	✓
✓	✓	✓
✓	✓	✓

SUBJECT: ROANOKE CITY
Sewerage - Additions to Sewage Treatment Plant - Contract E - Secondary and Tertiary Facilities

November 27, 1972

State Water Control Board
P. O. Box 11143
Richmond, Virginia 23230

Attention: Mr. A. H. Paessler, Director, Bureau of Water Quality

Gentlemen:

Plans and specifications for "Contract E - Additions to Sewage Treatment Plant (14 MGD Secondary and 35 MGD Tertiary Sewage Treatment Plant Additions) dated 1972 have been received from Alvord, Burdick and Howson, Engineers, Chicago, Illinois.

The facilities were designed to treat an average sewage flow of 35 MGD with peak hydraulic capacity of 60 MGD and to produce an effluent with the following constituents:

BOD₅ - 1000 pounds per day
Suspended solids - 150 pounds per day
Phosphorus - 40 pounds per day
Ammonia - 2 ppm

Contract E Covers construction of secondary and tertiary waste treatment facilities. Secondary process units include four (4) additional aeration units followed by four (4) additional settling units, six (6) new nitrification process units with four (4) new associated settling units, three (3) additional primary digesters, one (1) additional secondary digester and three (3) new floatation type sludge thickeners. This will complete, at the 35 MGD capacity, a process with primary sedimentation, activated sludge, secondary sedimentation, nitrification and settling which will be operated to produce treated sewage to meet the required standards. The new Advanced Waste Treatment (tertiary) portion consisting of two (2) rapid mix units, four (4) flocculation units, four (4) coagulation process units, eight (8) filtration units and chlorination facilities.

Page 2
State Water Control Board
Subject: Roanoke City

The contract is divided into three divisions:

- Division 1 - 14 MGD activated sludge addition, nitrification facilities, thickeners, and digesters (biological process units).
- Division 2 - 35 MGD tertiary treatment plant (physical-chemical process units).
- Division 3 - Combination bid for Divisions 1 and 2.

In summary, the following associated projects were reviewed and/or approved with conditions and may be in some stage of construction to be coordinated with this project (Contract E - above):

1. Contract "A" Division No. 1 Sludge Lagoons (reference our letter to Board March 13, 1972)
2. Contract "A" Division No. 2 Phosphorus Removal Facilities (our letter to the Board March 3, 1972)
3. Contract "B" Specifications for Furnishing Equipment for Sewage Plant Additions (our letter to the Board July 14, 1972)
4. Contract "C" Primary Treatment Facilities (our letter to the Board September 14, 1972)
5. Contract "D" 30 Million Gallon Basin (our letter to the Board November 13, 1972)

This is to advise that these plans and specifications are approved by this Department with the attached conditions. Due to the complex nature of this project with present and future coordinated work (including various above mentioned projects) any conflicts should be resolved prior to construction.

This letter report is in compliance with the State Water Control Law, Code of Virginia 1950 as amended by the 1970 General Assembly in Title 62.1, Chapter 3.1, Article 4, Section 62.1-44.19, Paragraph 3.

Notification of action taken by the Board should be forwarded to: Mr. Julian Hirst, City Manager, Municipal Building, Roanoke, Virginia 24011; with copies to Mr. S. H. McGhee, III, City Engineer, Municipal Building,

Page 3

State Water Control Board

Subject: Roanoke City

Roanoke, Virginia 24011; Alvord, Burdick and Howson, Engineers, 20 North Wacker Drive, Chicago, Illinois 60606; Environmental Protection Agency; and to this Division.

Attached are one copy each of plans entitled "Contract E, Plans for Additions to Sewage Treatment Plant, Roanoke, Virginia", specifications entitled "Contract E, Specifications for 14 MGD Secondary and 35 MGD Tertiary Sewage Treatment Plant Additions, Roanoke, Virginia". These documents are dated 1972 and prepared by Alvord, Burdick and Howson, Engineers, Chicago, Illinois. Three copies each of the plans and specifications have been sent directly to the Board by the Engineer.

Sincerely,



O. H. Adams, P.E., Director
Division of Engineering

cc: W. L. Rossie, Jr.
SWCB - Blacksburg

Enclosures

SUBJECT: ROANOKE CITY
Sewerage - Additions to Sewage Treatment
Plant Contract E - Secondary
and Tertiary Facilities -
Attachment

November 22, 1972

ROANOKE CITY

Contract E Conditions

1. The hold-ballast pond connections and flow pattern are not indicated, (Sheet 1 and Sheet 3). This should be clarified.
2. The chlorine contact tank individual section drains should be clarified to show how basin can be cleaned with one section in operation. Wastewater suction line should be shown from filter building, (Sheet 2).
3. Interplant recycle treatment should be shown and/or clarified with reference to solid return lines from thickener, supernatant, waste nitrified, etc., and the line to farm should be eliminated. This farm line was a temporary expedient connection used during interim time period.
4. The plans expansion appears to encroach on residential area closer than recommended 600 feet, (Sheet 3).
5. The specification should include clarification of distance relationships between water and waste lines. All water connections should be identified as potable or non potable, "Not safe for drinking", and clarified on plans including vacuum breakers where necessary on hydrants, etc.
6. An evaluation of present noise level in blower room should be made and if necessary, construction adjustment in these plans should be made as result of evaluation for the new units.
7. Some consideration should be given to laboratory expansion equipment, etc. commensurate with increased lab load due to tertiary treatment. Equipment capacity limitation and table top space are limited. Please clarify that this has been evaluated.
8. A spray arrangement should be provided on aeration units. The nitrification pH control provision mentioned in functional design report appeared to be overlooked or eliminated. Pickling liquor lines at entrance to Basin also needs clarification. These items should be clarified.
9. These above attached comments or conditions when supplemented by our previous dependent comments on the other projects listed including those with reference to Roanoke City "Basic Concept Plans for Secondary and Advanced Waste Treatment Facilities" constitute our conditions for approval of Roanoke City Waste